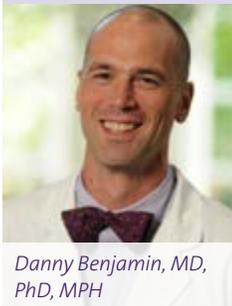




Post

A Message from the Lead Principal Investigator



Danny Benjamin, MD, PhD, MPH

Welcome to the *nineteenth* issue of the *PTN Post*, your quarterly source for information about the work of the Pediatric Trials Network (PTN).

The Network remains actively involved with the review of ~60 medicines through an array of investigational studies. Of the many ongoing projects, we have 4 new trials gearing up:

Pharmacokinetics of Anti-epileptic Drugs in Obese Children

(AED), Long-term Antipsychotic Pediatric Safety Trial (LAPS), Safety of Sildenafil in Premature Infants at Risk of Bronchopulmonary Dysplasia (SIL02), and Mercy BabyTAPE 03 (TAP03). This issue highlights a few of these new trials, and includes an interview with Dr. Susan Abdel-Rahman, Investigator for the Mercy TAPE studies.

Emboldened by the commitment and engagement of our sites, staff, patients and their families, the network forges ahead towards making drugs safer and more effective for use in the youngest patients.

NEW STUDY: Long-term Antipsychotic Pediatric Safety Trial (LAPS)

The study team is finalizing the LAPS protocol with the main objective to evaluate long-term weight changes associated with risperidone or aripiprazole drug therapies in children 3–17 years of age. Children who take antipsychotic medications are vulnerable to associated weight gain and the many effects of obesity on morbidity and mortality. The LAPS study will look at the potential metabolic and neuromotor health effects associated with long-term antipsychotic use. Since some participants may stop treatment with risperidone or aripiprazole or switch to a different antipsychotic, the study may also provide information about the persistence of adverse effects after risperidone or aripiprazole discontinuation or with other second generation antipsychotics.

The Best Pharmaceuticals for Children Act (BPCA) Annual Meeting was held December 8, 2016 at NICHD headquarters in Bethesda, MD where BPCA leaders [presented](#) an overview of the accomplishments of the program with emphasis on lessons learned, and shared insights into next steps. Gary Furda, Program Manager for the PTN Coordinating Center attended the meeting. Upon learning about the breadth of the program's accomplishments, he felt deep admiration to everyone involved, especially to the research subjects and their families who have contributed to its success. Furda states, "Building upon the hard work of the BPCA program and the energy and commitment of all involved, the future is filled with promise of achievements yet to come."



News Bite

Measure for Measure: Mercy TAPE

By Allyn Meredith

Susan Abdel-Rahman, PharmD is the Chief of Section of Therapeutic Innovation within the Division of Clinical Pharmacology at Children's Mercy Hospital. Dr. Abdel-Rahman works to develop devices, diagnostics, decision support tools, and drugs to more effectively and safely treat children.

For PTN, Dr. Abdel-Rahman is Chair of the Mercy TAPE and babyTAPE studies (Taking the Guesswork out of Pediatric Weight Estimation, TAPE) – TAP 01, 02 and 03. These 3 studies strive to validate 2 new weight estimation tools for use in neonates, infants, children, and adolescents when more traditional models are impractical or unavailable. The following was redacted from a conversation held in January of 2017.

With PTN, we started with TAP 01, also known as Mercy TAPE, which had already been developed for use in children 2 months to sixteen years of age to estimate weight when there isn't the ability or opportunity to use the gold standard, a scale. This is a more prevalent problem in low income settings. If kids are not mobile or have another device

attached to them, especially in trauma and emergency situations, it can be impossible to get the child on a scale. This is important because weight is one of the premier vital signs in children, and essentially all medication dosing is based upon the weight of the child.

In TAP01, PTN was instrumental in generating data needed for FDA approval, which we received. In May of 2015, Mercy TAPE became the first and only pediatric weight estimation device that is not a scale to be cleared by the FDA for market. Pediatric care providers in dozens of countries are now using Mercy TAPE—it's sent to all continents—free of charge with generous support from local donors. Every few weeks, we get new requests for the devices. There is an especially high need in places where resources are limited, places that don't have access to the technology that we have in the US.

But a gap remained for those very young infants and newborns. While the Mercy TAPE works well for young children, there were no data to support its use below 2 months of age, and being able to track growth and development at this age is critical.

That's where the Mercy Baby TAPE, TAP 02 and 03 studies, came in. TAP 02 was designed to generate the data that we needed to design the best weight estimation device for babies. We needed to examine the anthropometric variables upon which the Mercy TAPE relied (the upper arm), but also explore other anatomical locations that might be more predictive. TAP 02 allowed us to run a large population trial of newborns from 0-3 months of age. We enrolled over 2000 infants, generated the anatomical data needed to design a new TAPE, and determined that best predictor of weight for this population, the combination of chest and head circumferences. From this developed the prototype babyTAPE device.

The aim of the TAP 03 study is to validate the Mercy babyTAPE and perform the necessary human factors testing. When the FDA looks at a new device, they want to see if it is being used correctly. If it is not, we need to answer: "How and why?" and "What is the impact to the patient?" Once we receive the all-clear from the FDA, the end game is to find a commercial partner to get the new device out into the field. We have a commitment from our CEO to, once again, make the license available at no cost for partners distributing these devices into high-need, low-resource setting.

For updates about PTN studies, check out the [PTN website](#), and for more details about Mercy TAPE, a [podcast](#).

NEW STUDY:

Pharmacokinetics of Anti-epileptic Drugs in Obese Children (AED)

Childhood obesity prevalence has increased significantly over the last decade. Obesity has the potential to alter drug disposition in children, leading to incorrect dosing with the potential for treatment failure or drug toxicities. For obese children requiring anti-epileptic drugs for the treatment of seizures, the occurrence of toxicity or therapeutic failure may be life-

threatening. Thus, the purpose of the AED study is to characterize the safety and pharmacokinetics of 4 commonly prescribed oral anti-epileptics drugs (levetiracetam, valproic acid, topiramate, and ocarbazepine) in obese children and adolescents. The study is currently recruiting patients in 9 sites located around the US.

The Pediatric Trials Network (PTN) is made possible by the Best Pharmaceuticals for Children Act (BPCA). The BPCA, first enacted in 2002, provides mechanisms for studying on- and off-patent drugs in children. Visit us on the web at www.pediatrictrials.org.

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